

METHOD AND SYSTEM FOR EFFICIENT LAYER 3-LAYER 7
ROUTING OF INTERNET PROTOCOL ("IP") FRAGMENTS

ABSTRACT

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According to the present invention there is provided to a method and system for efficiently routing IP fragments (i.e., datagrams) at layer 3 through layer 7 of the OSI model without reassembling the fragments. Time-consuming reassembly of fragments of a datagram at higher layers that would be required via conventional methods is avoided,

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thereby improving processing speed of fragments and utilizing fewer resources for processing fragments of a datagram than would be required during reassembly of the fragments via conventional methods. The method and system route a datagram that has been fragmented into a plurality of fragments utilizing content-based routing information included in one or more fragments of the plurality of fragments, comprising: generating a

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context for the datagram associated with routing the plurality of fragments of the datagram and setting the context for the datagram to passive until content-based routing information included in the one or more fragments is received; caching received fragments while the context is set to passive; determining a destination for routing the plurality of fragments when content-based routing information included in the one or

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more fragments is received and setting the context for the datagram to active; and routing any cached fragments and subsequently received fragments of the datagram to the determined destination while the context is active without reassembling the plurality of fragments into the datagram. Additionally, a router and server load balancer incorporating the present invention are provided.